

(No Model.)

L. GRAFF.
STEAM TRAP.

No. 386,633.

Patented July 24, 1888.

Fig. I.

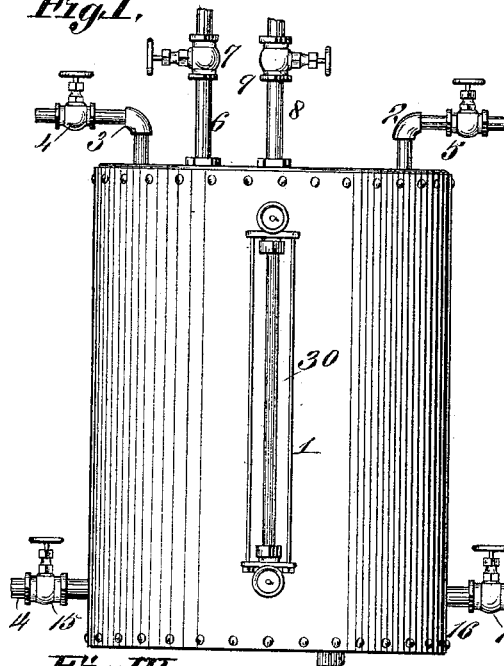


Fig. II.

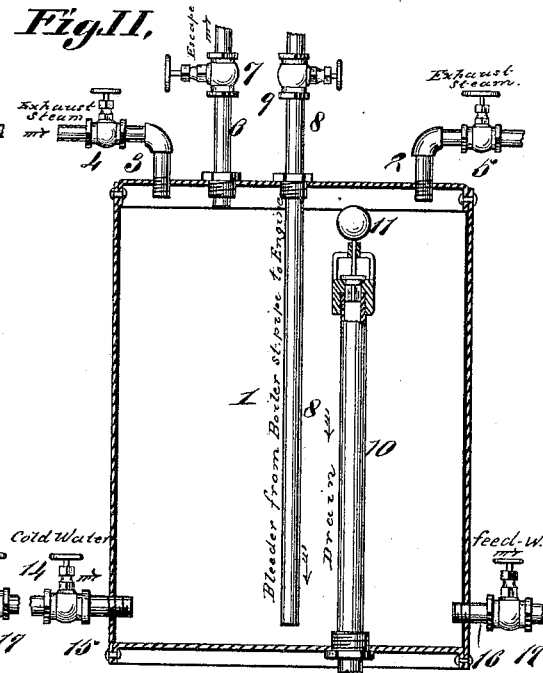
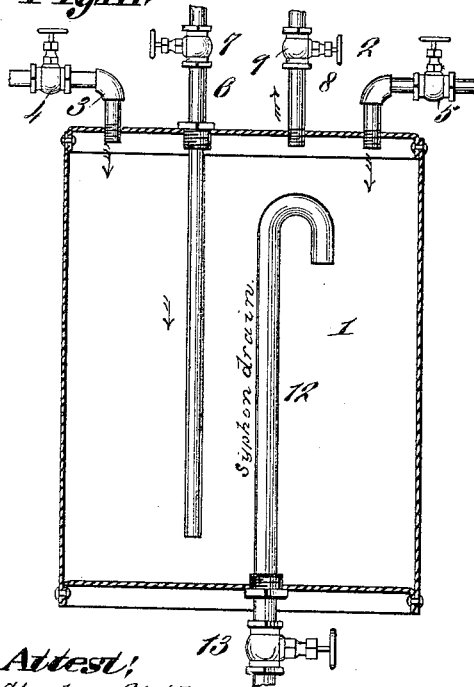


Fig. III.



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UNITED STATES PATENT OFFICE.

LOUIS GRAFF, OF MEMPHIS, TENNESSEE.

STEAM-TRAP.

SPECIFICATION forming part of Letters Patent No. 386,633, dated July 24, 1888.

Application filed May 7, 1887. Serial No. 237,442. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GRAFF, of the city of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Feed-Water Heaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is an elevation, giving a general view of my apparatus. Figs. II and III are sections showing the position of the various pipes.

My invention relates to a feed-water heater; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

1 is the body of the apparatus.

2 and 3 are pipes that convey the exhaust-steam from the cylinders to the heater, where it condenses.

4 and 5 are valves by which the exhaust-steam may be shut off from the heater.

6 is an escape-pipe having a valve, 7, by which the steam may be released from the heater at any desired time when there is too great an accumulation, or for any other reason.

8 is a bleeder, which connects with the steam-pipe leading from the boiler to the cylinders. This pipe serves the double purpose of drawing the water which comes from the steam condensing in the pipe or for the purpose of conveying steam into the heater when the boiler has too great an amount on hand, and at the same time warms the water in the heater preparatory to being used over again. The bleeder is regulated by a valve, 9.

10 is a drain-pipe, which enters from the bottom of the heater. This pipe is provided with a float-valve, 11, which will allow a certain amount of water to escape, but no steam. As

a modification, a pipe, 12, controlled by a valve, 13, and provided at its upper end with a gooseneck, may also be used to drain the heater.

14 is a supply-pipe having a valve, 15, through which cold water may be pumped into the heater in order to become heated by the waste-steam or by the steam direct from the boiler; and 16 is a pipe having valve 17, through which the water after being heated is pumped into the boiler. The heater may also be applied to a steam-boiler for heating houses.

There is a gage, 30, placed on the outside of the heater, and which is connected with the interior by suitable means, thus enabling a person to tell the amount of water in the heater.

I claim as my invention--

1. The combination of the cylinder 1, the exhaust-steam pipes 2 and 3, the escape-pipe 6, bleeder 8, drain-pipe 10, supply-pipe 14, and discharge-pipe 17, arranged as described, for the purpose set forth.

2. The combination of the cylinder 1, exhaust-steam pipes, escape-pipe, bleeder, supply-pipe, discharge-pipe, and a drain-pipe provided with a valve to regulate flow of water and prevent passage of steam therethrough, as set forth.

3. The combination of the cylinder 1, exhaust-steam pipes, escape-pipe, bleeder, supply-pipe, discharge-pipe, and a drain-pipe provided with the valve 11, for letting off a limited amount of water, as and for the purposes set forth.

LOUIS GRAFF.

In presence of—

M. R. CHEEK,

W. G. SKIPWITH.